

Appendix B

Glossary¹

ANOXIC Refers to ocean basins that contain little or no dissolved oxygen and hence little or no benthic marine life. These conditions arise in basins or fjords where physical circulation of seawater is limited.

ANTIDUNES Bed forms that are in phase with water surface gravity waves. Height and wavelength depend on the scale of the system and characteristics of the fluid and bed material (Figure 4-3).

BACK BARRIER Pertaining to the lagoon-marsh-tidal creek complex in the lee of a coastal barrier island, barrier spit, or baymouth barrier (Figures 3-15 and 3-16).

BACKSHORE The portion of a beach that extends from the upward limit of wave uprush at normal high tide landward to the first major change in topography (such as the base of a cliff or dune). Backshore is the horizontal upper part of a beach and is approximately synonymous to berm (Figure 2-1).

BARRIERS, COASTAL Elongated, shore-parallel, usually sandy features that parallel coasts in many places and are separated from the mainland by bodies of water of various sizes, and/or salt marshes, lagoons, mud, or sand flats, and tidal creeks (Figures 3-15 and 3-16).

BED FORMS Deviations from a flat bed generated by stream flow on the bed of an alluvial channel.

BEDROCK The solid rock that underlies gravel, soil, and other superficial material. Bedrock may be exposed at the surface (an outcrop) or it may be buried under hundreds or thousands of meters of unconsolidated material (as along the Gulf of Mexico coast).

BIOTURBATION The disturbance of sediment bedding by the activities of burrowing organisms.

BOTTOMSET (bed) One of the horizontal or gently inclined sediment layers deposited in front of the advancing foreset beds of a delta.

CHEMICAL WEATHERING Disintegration of rocks and sediments by chemical alteration of the constituent

minerals or of the cementing matrix. It is caused by exposure, oxidation, temperature changes, and biological processes.

CLIMATE Characterization of the prevailing, long-term meteorologic conditions of an area using averages and various statistics.

CLOSURE DEPTH The depth beyond which sediments are not normally affected by waves.

COAST A strip of land of indefinite width that extends from the coastline inland as far as the first major change in topography (such as the base of a cliff or dune).

COASTAL PLAIN A relatively low plain of subdued topography underlain by horizontal or gently sloping sedimentary strata extending inland of a coastline (Figure 2-2).

COASTAL ZONE The transition zone where the land meets water, the region that is directly influenced by marine and lacustrine hydrodynamic processes. Extends offshore to the continental shelf break and onshore to the first major change in topography above the reach of major storm waves. On barrier coasts, includes the bays and lagoons between the barrier and the mainland.

CONSOLIDATION The adjustment and compaction of sediment in response to increased load (e.g. the squeezing of water from the pores).

CONTINENTAL SHELF The submerged zone bordering a coast from the toe of the shoreface to the depth where there is a marked steepening of slope (Figure 2-2).

CORAL REEF Massive (usually) calcareous rock structure that is slowly constructed by simple colonial animals that live as a thin layer on the rock surface. The living organisms continually build new structures on top of the old, extending the reef seaward and upward towards the surface (Figure 3-23).

CYCLONE A system of winds that rotates about a center of low atmospheric pressure. Rotation is clockwise in the Southern Hemisphere and anti-clockwise in the Northern Hemisphere.

DATUM A fixed or assumed line, point, or surface in relation to which others are determined (example: datum plane of mean sea level) (Tables 2-2 and 2-3).

¹ An extensive glossary of cartographic terms is provided in Appendix A of Shalowitz (1964).

DELTAIC Pertaining to river deltas (Figure 4-9).

DENDROCHRONOLOGY The examination and correlation of growth rings of trees with the purpose of dating events in the recent past.

DOWNDRIFT The direction in which littoral drift is moving.

DUNE Underwater: Flow-transverse bedform with spacing from under 1 m to over 1,000 m that develops on a sediment bed under unidirectional currents (Figure 4-3). On land: A rounded hill or ridge of sand heaped up by action of the wind (Figure 3-7).

EBB SHIELD High, landward margin of a flood-tidal shoal that helps divert ebb-tide currents around the shoal (Figure 4-15).

EL NIÑO Warm equatorial water which flows southward along the coast of Peru during February and March of certain years. It is caused by poleward motions of air, which cause coastal downwelling, leading to the reversal in the normal north-flowing cold coastal currents. El Niño can cause a great reduction in fisheries and severe economic hardships.

ESTUARY The seaward portion of a drowned valley that receives sediment from both fluvial and marine sources, and that contains sedimentary facies influenced by tide, wave, and fluvial processes (Figure 3-1). Fresh water mixes with seawater in estuaries, resulting in complex biological and chemical environments.

EUSTATIC SEA LEVEL CHANGE Change in the relative volume of the world's ocean basins and the total amount of ocean water. It must be measured by recording the movement in sea surface elevation relative to a stable, undeformed, universally adopted reference frame.

EXFOLIATION A type of jointing which occurs in concentric shells around a rock mass - caused by the release of confining pressure.

FLUVIAL Pertaining to streams; e.g. fluvial sediments.

FLOOD CHANNEL Channel located on ebb-tidal shoal that carries the flood tide over the tidal flat into the back bay or lagoon (Figure 4-15).

FLOOD RAMP Seaward-dipping sand platform dominated by flood-tidal currents, located on ebb-tidal shoal near the opening to the inlet (Figure 4-15).

FORESET (bed) Inclined layers of a cross-bedded unit, specifically on the frontal slope of a delta or the lee of a dune.

FORESHORE The beach face, the portion of the shore extending from the low-water line up to the limit of wave uprush at high tide (Figure 2-1).

GEOCHRONOLOGY The study of time in relationship to the history of the earth. Encompasses radiometric and non-radiometric techniques to date sediments and strata (Figure 2-3).

HALF LIFE The time required for half of the atoms of a radioactive element to disintegrate into atoms of another element.

HEAVY MINERAL Mineral species with a specific gravity greater than a heavy liquid such as bromoform, used to separate heavies from lighter minerals. Usually with a specific gravity of around 2.9 or higher.

HOLOCENE An epoch of the Quaternary period from the end of the Pleistocene (approximately 8,000 years ago) to the present. Often used as a synonym for recent (Table 2-1).

HOMOPYCNAL FLOW A condition in which the outflow jet from a river or coastal inlet and the water in the receiving basin are of the same density or are vertically mixed.

HYPERPYCNAL FLOW Outflow from an inlet or saline lagoon where the issuing water is denser and plunges beneath the receiving basin water. Dense, saline water flowing out of the Mediterranean sea through the Straits of Gibraltar is hyperpycnal and forms a deep, characteristic plume in the Atlantic.

HYPOPYCNAL FLOW Outflow from a river or coastal inlet in which a wedge of less dense water flows over the denser sea water.

INLET A connecting passage between two bodies of water (Figure 4-15). Typically refers to tidal openings in barrier islands, but can also be applied to river mouths in tidal and non-tidal environments.

INTERTIDAL Between high and low water.

ISOSTATIC ADJUSTMENT The process by which the crust of the earth attains gravitational equilibrium with respect to superimposed forces such as gravity. An example is the depression of land masses caused by the overburden of continental glaciers.

JETTY A shore-perpendicular structure built to stabilize an inlet and prevent the inlet channel from filling with sediment.

JOINTING The tendency of rocks to develop parallel sets of fractures without obvious external movement like faulting.

LAGOON Open water between a coastal barrier and the mainland. Also water bodies behind coral reefs and enclosed by atolls (Figures 3-16 and 3-23).

LAHAR A landslide or mudflow of pyroclastic material that flows down the flanks of a volcano, often at great speed and with destructive violence.

LAMINAE (or lamina) The thinnest recognizable layer in a sediment or sedimentary rock.

LAVA Molten rock (and gasses with the rock) that have erupted onto the earth's surface.

LICHENOMETRY The study of lichens, complex thallophytic plants consisting of algae and fungus growing in symbiotic association, to determine relative ages of sedimentary structures.

LITHOLOGY The general character of a rock or sediment.

LITTORAL DRIFT The movement of sediment alongshore. Also the material being moved alongshore.

MAGMA Molten rock that is still underground.

MARGINAL FLOOD CHANNELS Channels flanking the updrift and downdrift barrier island shores which carry flood tidal currents into the mouth of an inlet (Figure 4-15).

MARSH A permanently or periodically submerged low-lying area that is vegetated.

MECHANICAL WEATHERING The physical breakdown of rocks and sediments by agents that cause abrasion (running water and waves), expansion and

contraction (temperature changes, hydration, freezing and thawing), and splitting (tree roots and boring organisms).

METEOROLOGY The study of the spatial and temporal behavior of atmospheric phenomena.

MUD FLAT A level area of fine silt and clay along a shore alternately covered or uncovered by the tide or covered by shallow water.

NATURAL TRACER A component of a sediment deposit that is unique to a particular source and can be used to identify the source and transport routes to a place of deposition.

NEARSHORE The region seaward of the shore (from approximately the step at the base of the surf zone) extending offshore to the toe of the shoreface (Figure 2-1). Nearshore is a general term used loosely by different authors to mean various areas of the coastal zone, ranging from the shoreline to the edge of the continental shelf.

OVERWASH A process in which waves penetrate inland of the beach. Particularly common on low barriers (Figure 2-1).

PALEOECOLOGY Study of the relationship between ancient organisms and their environment.

PALEOSOL A buried (possibly ancient) soil.

PALYNOLOGY The study of pollen and spores in ancient sediments.

PEAT Unconsolidated deposit of semicarbonized plant remains in a water-saturated environment such as a bog. Considered an early stage in the development of coal.

PEDOGENESIS Soil formation.

PITCH Angle between the horizontal and any linear feature.

PLANE BEDS A horizontal bed without elevations or depressions larger than the maximum size of the exposed sediment grains (Figure 4-3).

PLEISTOCENE An epoch of the Quaternary period before the Holocene. It began 2 to 3 million years ago and lasted until the start of the Holocene epoch about 8,000 years ago (Figure 2-3).

REEF Ridgelike or moundlike structure built by sedentary calcareous organisms, especially corals (Figure 3-23).

RELATIVE SEA LEVEL Elevation of the sea surface relative to a local land surface.

RIPPLES Small underwater bed forms with crest-to-crest spacing less than about 0.6 m and height less than about 0.03 m (Figure 4-1).

SEDIMENT Solid fragmented material (sand, gravel, silt, etc.) transported by wind, water, or ice or chemically precipitated from solution or secreted by organisms.

SEICHE A movement back and forth of water in a lake or other mostly enclosed body of water.

SEISMOGRAPH An instrument that records elastic waves in the ground produced by earthquakes, explosions, landslides, or ocean waves.

SELECTIVE SORTING A process occurring during sediment transport that tends to separate particles according to their size, density, and shape.

SHORE A general term applied to the land that directly borders the sea; more specifically, the strip of land extending from the low-water line landward to the normal upper limit of storm wave effects (Figure 2-1).

SHOREFACE A seaward-sloping ramp, seaward of the low-water line that leads to the inner continental shelf and is characteristically steeper than the shelf floor.

SHORELINE The line of demarcation between a shore and the water. May fluctuate periodically due to tide or winds.

SOIL Unconsolidated sediments which contain nutrients, organic matter, etc., and serve as a medium for the growth of land plants.

SPILLOVER LOBE Linguoid, bar-like feature formed by ebb tidal current flow over a low area of an ebb shield (Figure 4-15).

SPIT An elongated, usually sandy, feature aligned parallel to the coast, that terminates in open water (Figure 3-19).

STRAND PLAIN A prograded shore built seawards by waves and currents (Figure 3).

SUBTIDAL Below the low-water datum; thus, permanently submerged.

SWASH BARS Sand bodies that form and migrate across ebb-tidal shoals because of currents generated by breaking waves (Figure 4-15).

SWASH PLATFORM Sand sheet located between the main ebb channel of a coastal inlet and an adjacent barrier island.

TEPHRA Clastic materials ejected from a volcano and transported through the air.

TEPHROCHRONOLOGY The collection, description, and dating of tephra.

THERMOLUMINESCENCE The property, displayed by many minerals, of emitting light when heated.

TIDAL CREEK A creek draining back-barrier areas with a current generated by the rise and fall of the tide.

TIDAL SHOALS Shoals that accumulate near inlets due to the transport of sediments by tidal currents associated with the inlet (Figure 4-15).

TIDES Periodic rise and fall of the ocean surface (primarily in coastal areas) caused by the gravitational interaction among the earth, moon, sun, and, to a lesser degree, other astronomical bodies (Figures 2-4 and 2-12).

TILT Sideways inclination of an aircraft or spaceship.

TROPICAL STORM General term for a low pressure synoptic-scale cyclone that develops in a tropical area.

TSUNAMI Long period wave created by ocean bottom earthquake, submarine landslide, or volcanic explosion. Tsunamis can travel across oceans and flood coastal areas.

UPDRIFT The direction along a coast from which littoral drift material is moving.

VARVE A sedimentary lamina or set of lamina deposited in a body of still water in a year's time.

VOLCANO Vent in the earth's surface through which magma and associated gases and ash erupt. Also refers to the conical-shaped mountain that forms around the vent by the accumulation of rock and ash (Figure 2-8).

WASHOVER Sediment deposited inland of a beach by overwash processes.

WEATHERING Destructive process by which atmospheric or biologic agents change rocks, causing physical disintegration and chemical decomposition.

YAW Refers to an aircraft's or spaceship's turning by angular motion about a vertical axis.